

N60200.AR.001689  
NAS CECIL FIELD, FL  
5090.3a

MEMORANDUM REGARDING FLORIDA DEPARTMENT OF ENVIRONMENTAL  
PROTECTION COMMENTS ON REMEDIAL DESIGN FOR OPERABLE UNIT 7 (OU 7) SITE 16  
NAS CECIL FIELD FL  
2/4/1999  
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Memorandum

Florida Department of  
Environmental Protection

NAS Cecil Field Administrative Record  
Document Index Number

TO: Mike Deliz - Remedial Project Manager  
THROUGH: Tim Bahr - Technical Review Section *B*  
FROM: Bill Neimes - Technical Review Section *WN*  
DATE: February 4, 1999  
SUBJECT: Remedial Design  
Operable Unit 7, Site 16  
Naval Air Station/Cecil Field  
Jacksonville, Florida

32215-007  
06.08.07.0006

I have reviewed the subject document dated November 1998 and prepared by Tetra Tech NUS, Inc. An air sparging/soil vapor extraction system that includes six air sparging wells and 18 soil vapor extraction wells is being proposed at this site for the source area remediation. Remediation for the non-source area groundwater plume involves natural attenuation monitoring. Due to the high cost involved with installing and operating this system and the complexities of operating the vapor treatment system, I am not a strong advocate of this proposed design. Personally, I would prefer an in-situ remediation such as the Fenton's reagent applied to the source area. I believe the cost involved using Fenton's reagent would be much less expensive, would require less time for remediation and would be less complex of an operation than this proposed remedial system. However, as we discussed, the selected remedy for remediation has been modified a few times already and there are now strict time constraints involved with implementing a remedial system. Since revising the selected remedy is not feasible nor advisable at this time, I will accept this remedial design for source area mitigation. I have included a few comments for your consideration on approaches to alleviate some of the, what I believe to be, excessive costs associated with this design.

- **Air Sparging wells.** Three deep and three intermediate air sparging wells are planned to be installed to remediate contaminated groundwater in the source area. These air sparging wells will consist of carbon steel casings and stainless steel screens. The two air sparging wells installed for the pilot study will be abandoned since these are PVC wells. The justification for installing steel wells rather than PVC wells is due to the possible presence of DNAPL's in the groundwater. The presence of DNAPL can, over a period of time, damage the integrity of PVC material. However, once the sparging system is implemented, if the sparging wells are effective at all, any DNAPL plume in the vicinity of the sparging wells should dissipate expeditiously. Therefore, even if there was a DNAPL plume in the source area and even if the air sparging wells dissected this DNAPL plume, the likely chance that this DNAPL plume will remain in the aquifer long enough to effect the structural integrity of the casing or screen is not probable. To reduce cost on the installation of sparging wells I would modify this design from steel

*"Protect, Conserve and Manage Florida's Environment and Natural Resources"*

**MEMORANDUM**

**Mike Deliz**

**Page Two**

**February 4, 1999**

wells to PVC wells. This would not only reduce the material and labor cost of installing each sparging well, but would also reduce the number of air sparging wells to be installed from six wells to four wells (since the two pilot study air sparging wells could be used rather than abandoned).

- **Air Sparging Compressor.** Page 3-11 of this plan notes that an operating compressor and a spare compressor will be purchased. Why is it necessary to purchase a spare compressor at this time? A new compressor should operate for several years without the need for a spare. If a replacement compressor is necessary, this could be purchased at the time it is required.

- **Air phase treatment.** Approximately one-quarter of the total cost to install and operate this remedial system for a year is involved with the air phase treatment system. In addition to the high cost for air phase treatment, the treatment system is a relatively complex system which will probably be very difficult to operate effectively. A catalytic oxidizer is difficult in itself to operate with varying influent concentrations. Added to this is the difficulty of operating a wet scrubber. Although I agree with all the calculations and the justification for the type of air phase treatment proposed, I believe that one of the assumptions provided in estimating the air concentrations may be overly conservative. This assumption is in averaging the groundwater concentrations for the source area plume. The designer used three pilot study groundwater concentration values and two non-pilot study groundwater concentration values in this design. These values were added together using an arithmetic averaging method to estimate the water concentration for this design. Rather than applying an arithmetic method in estimating the water concentrations, the designer should use a weighted concentration-area method in its approach based on concentration contours of the groundwater plume. I believe a concentration-area method of calculating an average concentration will provide a much more realistic calculation of what to expect when six air sparging wells and 18 soil vapor extraction wells are operating simultaneously with most of these wells not being in the highly concentrated area. It would also be advisable for the consultant to provide an estimate of the mass of contamination in the soils and groundwater. Although this will only be an estimate and may be very inaccurate from the actual mass of contamination in the soils and groundwater, this calculation should provide either more justification of the need for a catalytic oxidizer or should demonstrate that carbon may suffice as an air treatment alternative.

- **Time to Install System.** The projected time to install this remedial is 10 weeks and as part of system installation, they have provided four weeks to install six air sparging wells and 18 soil vapor extraction wells (the soil vapor extraction wells will be installed to a depth of only 5 feet). The amount of time to install air sparging and soil vapor extraction wells is much too long and should be negotiated to a lower period of time.

MEMORANDUM  
Mike Deliz  
Page Three  
February 4, 1999

- **Support Personnel.** The amount of time allocated for the project engineer and project manager is confusing. Included in the cost estimate are 5 weeks allocated to each person. However, under the cost estimate assumptions, there is a note that these two individuals will only visit the site twice during the project and stay for two days each visit. Is the total time allocated for these two personnel four days or five weeks?

- **Per diem.** Is \$176 per day an appropriate amount for per diem in Jacksonville? This appears to be rather excessive.

If you have any comments or questions on this memo, please see me in my office.

cc: Greg Brown - BWC